

1 WHAT IS CLAIMED IS:

1 1. A method of writing to a dual-port memory, the method comprising:
2 providing a data bit on a data line, and a complement of the data bit on a
3 complementary data line;
4 selecting a word line to activate a first device coupled to the data line and a
5 second device coupled to the complementary data line; and
6 selecting a column select line to activate a third device coupled between the first
7 device and a first node of a memory cell, and a fourth device coupled between the second device
8 and a second node of the memory cell.

1 2. The method of claim 1 further comprising:
2 before selecting the column select line, asserting a write enable.

1 3. The method of claim 2 further comprising:
2 deselecting the write enable; and
3 deactivating the third device and the fourth device.

1 4. The method of claim 3 wherein the first, second, third, and fourth devices
2 are NMOS devices.

1 5. The method of claim 1 wherein the word line further couples to a read
2 cell.

1 6. A method of determining the presence of a match between a data entry
2 and a comparand in a content addressable memory, the content addressable memory comprising
3 a plurality of memory storage cells arranged in rows and columns, each memory storage cell
4 having a write circuit and a read circuit, wherein the write circuit and the read circuit of each
5 memory storage cell in a row is coupled to one word line, and wherein the read cells of each
6 memory storage cell in a column are coupled to one first read line and one second read line, the
7 method comprising:
8 writing the data entry to odd numbered memory storage cells in a column of
9 memory storage cells;

10 writing a complement of the data entry to even numbered memory storage cells in
11 the column of memory storage cells;
12 driving word lines coupled to the even numbered memory storage cells in the
13 column of memory storage cells with the comparand; and
14 driving word lines coupled to the odd numbered memory storage cells in the
15 column of memory storage cells with a complement of the comparand.

1 7. The method of claim 5 further comprising:
2 determining a parallel impedance of the read cells in the column of memory
3 storage cells, and outputting a match is the impedance is high..

1 8. The method of claim 6 further comprising decoding the position of the
2 column of the match as a binary word.

1 9. The method of claim 7 wherein the data entries are product terms.

1 10. A method of writing to a dual-port memory comprising:
2 providing a data bit on a data line, and a complement of the data bit on a
3 complementary data line;
4 asserting a write enable signal, which asserts a column select line thus activating a
5 first and second device; and
6 asserting a word line thus activating a third and fourth device,
7 wherein the first and third devices are coupled between the data line and a first
8 node of a memory cell, and the second and fourth devices are coupled between the
9 complementary data line and a second node of the memory cell.

1 11. The method of claim 10 wherein a gate of the third device and a gate of
2 the fourth device are coupled to the word line, and the third device is coupled to the data line and
3 the fourth device is coupled to the complementary data line.

1 12. The method of claim 11 wherein the word line further couples to a read
2 cell.

1 13. The method of claim 12 wherein a gate of the first device and a gate of the
2 second device couple to the column select line.

1 14. The method of claim 13 wherein the first, second, third, and fourth devices
2 are NMOS devices.

1 15. A method of reading data in a dual port memory comprising:
2 selecting a word line thus activating a first device; and
3 sensing an impedance between a first node and a second node,
4 wherein the first device and a second device are coupled in series between the
5 first node and the second node, the second device having a gate coupled to a first node in a
6 memory cell, and
7 wherein the word line couples to a third device and a fourth device, the third
8 device and fourth devices used for writing to the memory cell.

1 16. The method of claim 15 wherein the third device couples between a data
2 line and a fifth device and the fourth device couples between a complementary data line and a
3 sixth device.

1 17. The method of claim 16 wherein the fifth device couples to the first node
2 in the memory cell and the sixth device couples to a second node in the memory cell.

1 18. The method of claim 17 wherein a gate of the fifth device and a gate of the
2 sixth device are coupled to a column select line, the column select line enabled by a write enable
3 signal.

1 19. The method of claim 18 wherein the memory cell comprises a first
2 inverter having an input and an output and a second inverter having an input and an output, the
3 input of the first inverter coupled to the output of the second inverter, and the input of the second
4 inverter coupled to the output of the first inverter.

1 20. The method of claim 15 wherein the first and second devices are NMOS
2 devices.